Town of Southold
Stewardship Management Plan for the Town's Pipes Cove Properties

Latest Revision: June 6, 2010
Adopted by the Town Board on June 29th, 2010 by resolution 2010-475.

Properties included in plan:

SCTM#	Location	Project	Funding	Acquisition Pursuant To
1000-45.-5-5	70380 Route 25	Reese	CPF	Chapter 185
1000-45.-5-7.3	1650 Shore Rd	Stackler	CPF	Chapter 185
1000-53.-3-2	1900 Pipes Neck Rd	Carroll	CPF	Chapter 185
1000-53.-2-5	700 Pipes Neck Rd	Waldron	CPF	Chapter 185
1000-53.-1-7	579 Pipes Neck Rd	Posillico	CPF	Chapter 185
1000-53.-3-15.1	1945 Pipes Neck Rd	Posillico	CPF	Chapter 185

Purposes of Property Acquisitions

These properties were purchased for the purposes of passive recreational/educational uses, the protection and restoration of natural resources and the natural scenic views of the properties. Proposed uses of the properties included the establishment of a nature preserve, a passive recreational area with trails and limited parking for access to the properties.

Special Conditions

Since the Town, due to assistance that TNC (The Nature Conservancy) has provided, has agreed via resolution that TNC will work with the Town on developing management plans for any open space acquisitions within the Pipes Cove area and since the properties noted above are all within the Pipes Cove area TNC will be consulted and involved in the development of the stewardship management plan for these properties prior to its adoption as well as subsequent adoptions of any changes to the plan.

Prohibited Activities

All activities not related to the purposes of the property acquisitions are prohibited.

Town Approval of Activities

No activities related to the purposes of the property acquisitions are allowed on the property without the explicit approval of the Town Board except for the activities listed in the Allowed Activities section below. Town Board approvals will be based on recommendations of the Land Preservation Committee.

Allowed Activities

Section I Public Uses

A. Posillico beach parcel SCTM# 1000-53.-3-15.1 at the end of Pipes Neck Rd only

Access shall be from dawn to dusk unless posted otherwise or approved per the Town Approval of Activities section above.

Hiking, jogging, walking.

Fishing and shellfishing.

Nature walks/surveys, bird watching, citizen science surveys.

Star gazing.

B. Reese & Stackler properties only

Deer hunting per the Town's official Deer Management Program.

C. Throughout the properties

Participation in the General Activities outlined below.

Section II General Activities

Inventories of the properties including flora, fauna, trails, trash, archaeological features, structures and any other aspects provided that conducting such inventories does not alter or damage the properties.

Invasive species control and removal provided a formal invasive species plan using Best Management Practices is approved, made part of this management plan and followed. The invasive species plan will be updated, expanded and amended as needed based on monitoring of the property for the extent of invasive species present.

Clean up of man made trash provided such clean up does not damage the properties.

Section III Infrastructure

Posting of Town Open Space, No Hunting and Deer Management program signs.

The existing improved road known as Shore Rd will be maintained in a condition suitable for the private home owners who have legal access over it to access their properties and for the Town to access the Stackler property.

The existing pedestrian bridge at the end of Pipes Neck Road that provides access to the Posillico beach parcel SCTM#1000-53.-3-15.1 may be maintained and repaired within its existing footprint. This bridge shall not be converted for vehicular access to the beach.

Appendices

1. Invasive Species Eradication Plan

Appendix 1
Invasive Species Eradication Plan

What follows is the grant application for a grant that has been awarded to the Town of Southold by the NYS DEC for funds to eradicate invasive phragmites from the Reese and Stackler Properties at Pipes Cove in Greenport. The application includes a detailed plan for the eradication of phragmites using currently accepted Best Management Practices. For the purposes of this Stewardship Management Plan it will be assumed that the Town may proceed with the plan for the Reese and Stackler properties included below regardless of whether or not the contractor noted is the actual contractor hired for the work. In addition the Town may proceed with the eradication of invasive phragmites from the other properties included in this Stewardship Management plan as per the eradication plan below.

Aquatic Invasive Species Eradication Grant Program
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233-4756
Attn: Timothy Sinnott

June 29, 2007

Project title:

PIPES COVE PHRAGMITES REMOVAL

ATTACHMENTS

Attachment A.

PROJECT NARRATIVE:

Applicant Information:	Town of Southold Town Hall Annex Office of Planning P.O. Box 1179 Southold, New York 11971
Project Contact:	Mark Terry Mark.Terry@town.southold.ny.us (631) 765-1938 ext 5022
Tax status:	Government Agency
Project Name:	**Pipes Cove Phragmites Removal**
Project locations:	(1) 70380 Main Road (Route 25), Greenport, Town of Southold, Suffolk County, New York and

(2) 1653, 1650, 2075 Shore Drive and no # on Silvermere Road, Greenport, Town of Southold, Suffolk County, New York

Suffolk County Tax Map#s: (1) 1000-45-5-5
(2) 1000-53-1-18, 47-2-33, 47-2-34, 45-5-7.1, 45-5-7.2

This project is located in NYSDEC Region One.

1. Goal and Objectives of the Project

The Town of Southold proposes to remove the invasive plant species *Phragmites australis* from 3.6 acres of marine wetlands located in the Pipes Cove Watershed. These wetlands have been historically impacted due to the construction of roads, ditches, and a railroad track encouraging the invasion of this plant throughout the marsh. The *Phragmites* will be manually cut and wicked over a period of three years. A five year monitoring program will be established to record the success of the project and identify areas in need of follow up treatment. .

The goal of the project is to permanently remove the *Phragmites* from the affected wetland and encourage the recolonization of the areas with native plant species. *Phragmites* is one of the most invasive and damaging plants to coastal wetlands in the Long Island marine environment. Hundreds of acres of salt marsh vegetation have been lost due to the plants robust growth habit and broad tolerance. Few plants can out compete *Phragmites* in a disturbed landscape. Once it has established, it spreads rapidly by long underground stolons throughout the ecosystem. The removal of the *Phragmites* as proposed will improve the entire ecosystem of the salt marsh.

.

2. Site Description

A. Locations: (1) 70380 Main Road (Route 25), Greenport, Town of Southold, Suffolk County, New York and
(2) 1653, 1650, 2075 Shore Drive and no # on Silvermere Road, Greenport, Town of Southold, Suffolk County, New York

This proposal will eradicate the *Phragmites* from two adjacent project sites. The first site is located south of New York State Route 25, 100' west of Silvermere Road, Greenport, Town of Southold, Suffolk County, New York. The total parcel is 47 acres. Phragmites monocultures comprise 2.2 acres of the site in the woodland high marsh ecotone. The remaining area consists of vacant woodland that is bisected by a high and low salt marsh. See attached map for area titled Parcel 1.

The second site is located on a town owned property of 38.2 acres. The parcel begins approximately 569 feet south of Route 25, along the westerly side of Shore Drive where Shore Drive intersects with lands of the Long Island Rail Road. It is bordered on the east by Shore Drive, on the south by Pipes Cove, to the west by Pipes Neck Creek, and north by lands of the Long Island Rail Road. The tidal wetland comprises 8 acres of the parcel.

B. Type: Tidal marsh

Phragmites monocultures are located in woodland and salt marsh on the ecotone. The size of Phragmites infestation is 1.4 acres. This second site is adjacent to the original site, Parcel 1. Both are part of the Pipes Cove watersheds. The area for removal of Phragmites is marked on the attached map, in red, and is titled Parcel 2.

The ecological significance of the Pipes Cove Watershed is high. The project sites are connected to the Peconic Estuary which was accepted into the National Estuary Program in September 1992, creating the Peconic Estuary Program. The wetlands proposed for restoration are connected to over 400 acres of wetlands, uplands, beaches, ponds, creeks, and submerged lands at Pipes' Cove including the Arshamomaque Wetlands system north of the site, that have been targeted for protection as part of the Peconic Estuary Program's Critical Lands Protection Strategy. This project pieces were purchased for protection by an agreement between the Town of Southold, the United States Fish and Wildlife Service, the New York State Department of Environmental Conservation, The Nature Conservancy, and the Town of Southold.

The National Estuary Program was established by the Clean Water Act of 1987 to promote long-term planning and management in nationally significant estuaries threatened by pollution, development, or overuse. Within the Peconic Estuary Program's Comprehensive Conservation and Management Plan, invasive species, specifically *Phragmites australis*, are highlighted as a grave threat to the Peconic System and notes that habitat restoration should be a priority. The Pipes Cove Complex, where this project is situated, is within a PEP Critical Natural Resource Area - a PEP designation given to areas of particular ecological significance.

In addition, the project sites are located in a New York State Department of Environmental Conservation designated Critical Environmental Area, and a New York State Significant Fish and Wildlife Habitat.

The sites contain *Phragmites australis* as a predominant plant species. The Phragmites australis occurs as several monocultures throughout the tidal marsh. Adjacent to the Phragmites australis areas, is a large healthy saltmeadow cordgrass (*Spartina patens)* marsh, containing several tidal marsh plant and animal species, including the following:

Salt Marsh Plant Species

Saltwater cord grass (*Spartina alterniflora*), along the edges of the ditches
Saltmeadow cordgrass (*Spartina patens)*, is the predominant plant species
Spikegrass (*Distichlis spicata*), throughout the marsh
Blackgrass (*Juncus gerardi*)
Sea lavender (*Limonium carolinianum*)
Glasswort (*Salicornia eurpaea*)
Groundsel tree (*Baccharis halimifolia*)
Marsh elder (*Iva frutescens*)

A variety of indigenous invertebrates were also observed, including:

Mud snail (*Nassarius obsoletus*)
Salt marsh snail (*melampus bidentatus*),
Rough periwinkle (*Littorina saxatilis*),
Ribbed mussel (*Modiolus demissus*),

Blue crab (*Callinectes sapidus*)
Green crab (*Carcinus maenas*)
Marsh crab (*Sesarma reticulatum*)
Fiddler crabs (*Uca pugnax and Uca minax*)
Amphipods

Vertebrates include the Common mummichog (*Fundulus heteroclitus*) and the Northern diamond back terrapin (*Malaclemys terrapin*).

C. Size: 3.6 acres
D. Mean and maximum depths: N/A
E. Shoreline: undeveloped
F. Said parcel is publicly owned land and accessible to the public.
G. Said parcel is undeveloped.
H. Habitat is described above.

3. Work Proposed

A. Species targeted for eradication: Common reed (Phragmites australis)
B. – E. Detailed below and in previous paragraphs.

The cut-stem treatment method will be used to eradicate the Phragmites australis from the sites with the application of Glyphosate (AquaPro or Touchdown Pro; a systemic herbicide; also under the brand name Rodeo) in the fall for a three year period, followed by cutting each year. The method of herbicide application depends on the density of the Phragmites and proximity of other desirable plants.

The Phragmites monocultures will be treated via manually wicking or backpack spraying dependent upon plant density. Herbicide shall be applied in the early fall, September through October for a period of three years. The herbicide Glyphosate will be applied at a 1% to 1.5% solution. Once plants have died, plants will be cut at ground level, manually raked and removed from site.

Follow-up treatments will be applied as necessary over a three year period. . .

The cut stem treatment to control the Phragmites has been done at several wetland sites. Currently the Nature Conservancy, using this same company (Allied Biological) is progressing on 2 sites in the Town of East Hampton. Injecting the cut stems of Phragmites australis with Rodeo after the tassel stage (mid-September-October) is very effective. The seeds are often not viable and germination and successful seedling establishment is rare, so it is not worthwhile to remove the flowers.

The cut-stem treatment kills most of the underground root system because there has been little to no re-sprouting 2 years after control. This method results in minimal off-target damage. It will take three years to treat several small infestations of *Phragmites* on this preserve using both Allied biological staff and Town employees.

A more formal and specific methodology and plan will be proposed by Allied Biological when they are contracted to eradicate the Phragmites. **Allied Biological** in Hackettstown, New Jersey has agreed to do the cutting, spraying, and removal of the Phragmites australis. Here is a description of their techniques from their website. They have completed a similar restoration in Hook Pond and Long Creek, East Hampton, New York. A complete plan will be proposed by them if the grant is approved. The following is from their website http://www.alliedbiological.com/

Invasive Species Control Techniques

With more than fifteen years of hands-on experience Allied Biological is the leader in providing comprehensive management services for control of invasive wetland plants. We pioneered the methodology used to apply herbicides via ground equipment to large wetland areas. Using a variety of amphibious vehicles, we are able to spray large tracts of phragmites and other wetland plants while avoiding the drift issues that accompany aerial applications. With platforms mounted on the vehicles, herbicides can be applied just above the top of the plants, and hand-directed spray can be used when desirable plants and target plants are interspersed.

In more sensitive areas, herbicides can be applied by backpack sprayer, mechanical wicking device or hand-wicking. Our technical staff is experienced in the identification and protection of desirable plants during an herbicide application, and regularly performs invasive plant control work in Wildlife Refuges, Parks and Preserves.

Allied Biological, Inc. incorporates cutting and mulching of invasive species into many of its wetland restoration projects. Using a low ground pressure, rubber-tracked vehicle with a specialized cutting attachment, we mow large stands of dead Phragmites australis canes. Cutting this invasive species, in conjunction with herbicide treatment, is generally more effective in restoring wetlands than use of either method alone. Such mechanical removal of the vegetation also expedites the reestablishment of native plants.

The herbicide Rodeo is the most common herbicide employed for *Phragmites* control, and can be effective in controlling monocultures of this plant. Rodeo is a moderately toxic herbicide containing glyphosate, the same active ingredient as Roundup, the common lawn and garden herbicide. The

glyphosate in Rodeo is not, however, pre-mixed with a surfactant. As described above, this nonselective herbicide is absorbed through plant leaves and translocated to plant roots, where it disrupts an enzyme essential to protein production. Cell disruption, decreased growth, and death of the plant root and rhizome eventually follow (Rilling, 1998a).

Rodeo should be applied to actively growing plants following pollination and tasseling (between July and September; Magee, 1981; Marks, Lapin & Randall, 1993). Rodeo is generally applied at a rate of 4-6 pints per acre (Cross & Fleming, 1989; Rilling, 1998a).
Rodeo should be applied during warm, sunny weather with no rain forecast for a minimum of 12 hours. Low wind conditions are also necessary to prevent spray drift onto non-target vegetation (OLISP, 1998; Rilling, 1998a). Rodeo has been applied using techniques ranging from manual spray equipment transported by backpack, to aerial application from a helicopter. Size of stand, accessibility, and proximity to rare plant species or other priority vegetation must be considered when planning herbicide application (Cross & Fleming, 1989). Wilting and yellowing generally begins within a week following application, and browning and deterioration of roots should be complete within 6-8 weeks (Rilling, 1998a). Removal of plants after shoots turn brown will assist recolonization by other plant species.

Rodeo is highly absorbent on substrates with high organic content, where it becomes inert, and non-volatile. Rodeo is degraded into natural products, *e.g.*, carbon dioxide, nitrogen gas, phosphate, and water, by soil microorganisms between 1 and 174 days (CCE, 1998a; Weinstein, 1996; Rilling, 1998a). Because glyphosate is strongly adsorbed to suspended organic materials, it has half life of 12 days to 10 weeks in natural waters (CCE, 1998a; Rilling, 1998a). For this reason it is recommended that Rodeo be mixed with distilled water prior to application to minimize absorbance onto particulate organic materials in tap or other water, decreasing the effectiveness of application. Rodeo has been approved by the U.S. EPA for use in aquatic systems (Cross & Fleming, 1989). The protein production enzyme disrupted by glyphosate is found only in plants (Rilling, 1998a). Rodeo is therefore considered of low toxicity for humans, birds, mammals, fishes, and aquatic invertebrates (Rilling, 1998a). There is low potential for accumulation of glyphosate in the environment or in animal tissues. No reproductive, teratogenic, mutagenic, carcinogenic, or organ toxicity effects have been found in field and laboratory evidence.

Rodeo must be mixed with a surfactant prior to application. The surfactant acts as a wetting agent, softening the waxy layer on plant surfaces and allowing glyphosate to be absorbed. Without a surfactant, the herbicide “balls up” on the leaf surface (CCE, 1998a; C. Rilling, personal communication). Some surfactants used with glyphosate (*e.g.*, Induce or Chemsurf 90) may have toxic effects for humans and the environment. For example, the surfactant additive found in Roundup is a modified tallow amine toxic to fish (CCE, 1998a). Roundup should therefore not be used for the control of *Phragmites australis* in aquatic environments. It should be noted that pesticide application is a regulated activity in the State of New York. Department of Environmental Conservation permit staff must be consulted prior to planning and undertaking any pesticide applications for *Phragmites australis* control.

4. People Involved in the Project, Qualifications, and their roles

Glenn Sullivan, President, Allied Biological, and staff biologists, experienced in the eradication of *Phragmites australis* along the east coast

Town of Southold staff employees working on project:

Mark Terry, Principal Planner, LWRP Coordinator, Town of Southold, since 2002. B.S. in Environmental Science, SUNY Environmental Science and Forestry, Syracuse, New York. Mark will be the project manager. Currently a planner with Southold, he has many years experience in marsh restoration projects in Florida. He will implement the different segments of the project, monitor the success of the eradication, and record the results of the project.

John Sepenoski, GIS specialist.
Technical Coordinator for project, Data Processing Department, Town Hall, Southold. Masters Degree in Engineering from Cornell University, Ithaca, New York. John will update the maps using GIS equipment in the field to record the areas of Phragmites removal. He will prepare the maps for the project showing areas of eradication.

Heather Cusack, Environmental Technician for the Town of Southold; B.A. in Human Ecology from Connecticut College, New London, Ct.; NYS Provisional Teaching Degree in Secondary Education in Biology from Dowling College, Oakdale, New York. Heather will apply for all necessary permits, and assist Mark in the monitoring of the project site.

Melissa Spiro, Land Preservation Department. Masters in Community Planning and Area development from the University of Rhode Island, Kingston, R.I. Planner with Southold Town since January 1988. Land Preservation Coordinator since 2000. Melissa is the Town contact for all information regarding the Town owned lands, stewardship of the land, and permission from the Town for the project.

Town employees from the Department of Public Works under the direction of department head Jim McMahon. These Town employees will do the actual field work that is necessary after the contractor has completed their work. They will dispose of the Phragmites at the Town landfill and do any needed follow up mowing or Phragmites removal as well as replanting of native plants in specific areas.

Town staff will be involved in the technical aspects of the project plan and implementation, obtaining permits from required agencies, post treatment monitoring and data collection at the project site, mowing, removal, and disposal of Phragmites, and replanting of native species if needed.

5. Significant resources on the property.

The salt marsh adjacent to the project area will not be negatively impacted by the herbicide application, *Phragmites australis* cutting or removal. There will be no disturbance to the *Spartina patens* tidal marsh next to the *Phragmites australis*. All necessary precautions will be taken to protect the healthy marsh. In the long run it will be a positive affect on the tidal wetland to restore the *Phragmites australis* area, increase tidal flow in that area, increase the biodiversity of the habitat, and reverse the trend of wetland loss due to *Phragmites australis* invasion. The removal of *Phragmites australis* will also increase wildlife habitat, improve water quality, and enhance “viewsheds”.

6. Past Efforts

There have been no efforts in the past to prevent, control or eradicate *Phragmites australis* on these parcels.

7. Long term monitoring plan

The project site will be monitored by Town staff. The areas slated for eradication will be photographed before and after each phase of the project. Transects will be established for monitoring the affect of the project on the plants. The area will be monitored over several years. Maps and layers within the Town's wetland inventory will be updated as the project progresses. The Town will monitor and update the GIS information on the Town's wetland maps.
Within the transects and quadrat areas the plants will be measured and counted. The site will also be used as a test site for other possible projects. Other projects may include the use of the site and the data in education/stewardship projects with area schools and the education of the public on *Phragmites australis* and other invasive species eradication throughout Southold Town.

Salt marsh vegetation (primarily Spartina alterniflora and S. patens) may be lost as a result of chemical and physical changes in the ecosystem and through competitive exclusion by invasive species. Even minor changes in the elevation or salinity of salt marsh habitats will enhance competitive exclusion, especially by common reed. Phragmites australis is indigenous to the northeast (Orson et al., 1987); however, an invasive form from Europe that spreads rapidly through brackish and freshwater marsh habitats is now believed to be present in North America (Besitka, 1996; Casagrande, 1997; R. Rozsa, personal communication).
Once established, Phragmites shades existing vegetation and hinders the germination and growth of other species. Phragmites stands are also thought to provide inferior nesting habitat for many marsh birds (Howe et al., 1978), including seaside sparrow, sharp-tailed sparrow, and willet. These marsh specialists are adapted to nesting in short grasses like Spartina patens and Distichlis spicata (Benoit, 1997). Conversion of salt marsh to Phragmites monocultures alters detrital cycling patterns due to the slower degradation rate of Phragmites' woody stalks, and increases the likelihood of fire as dead, woody stems accumulate (Niering & Warren, 1980). The slower degradation rate of Phragmites stalks can also raise the elevation of the marsh, thereby decreasing the area that can be flooded with salt water by tidal flow and further promoting Phragmites australis invasion (T. Diers, personal communication). Stands of Phragmites, growing up to 14 feet in height, are often considered to negatively impact the "viewshed" in an area (Tiner, 1987; Eastman, 1995).

COMMON REED CONTROL—MONITORING PROTOCOL
The New York State Salt Marsh and Monitoring Program will be applied to the area post treatment.

1) Principle parties:
Monitoring will be performed by Town of Southold Local Waterfront Revitalization Program Coordinator and Town of Southold Environmental Technician**.**

2) Purpose of the protocol:

This monitoring protocol is designed to assess the progress towards, and the success or failure of, the restoration project.

3) Monitoring Duration Period
Project areas will be monitored for a period of 5 years,

4) Monitoring Protocol Design:

a. Transects: A total of four evenly spaced transects will be located with in the project area. Transects shall run perpendicular to the mosquito ditch located in the center of the project site to the landward edge of the project. Transect locations will be permanently marked at the each end using PVC poles.

c. Quadrants: One meter square quadrants will be established at even intervals along the each transect. Quadrants corners will be delineated using PVC piping. Taxonomy, percent cover, stem density and height of each species occurring in the quadrant will be recorded.

b. **Permanent fixed-point photo stations:** Four permanent photostations for photographic monitoring will be established at the origin of each transect. All photographs shall be in the form of color prints no smaller than 4" x 6". In addition all quadrants will be photographed and submitted within the reports during the monitoring program

5) Monitoring Reporting Requirements:
Annual monitoring reports shall be submitted by October 30th to all applicable agencies fro a period of five years. Reports shall include labeled photographs, as well as a brief summary of the collected data.

Evaluation of Herbicide Treatments

A variety of Phragmites australis herbicide application techniques will be developed and evaluated depending on characteristics of the vegetation in the immediate area and the evaluation by Glenn Sullivan of Allied Biological.

A report will be put together at the completion of three years to show the affects of the treatments on the *Phragmites australis*.

8. Resolution from the Town Board approving application and matching funds

See attached.

9. SEQRA/Permit Issues

The New York State Department of Environmental Conservation requires permits for the cutting and spraying of *Phragmites australis*. They have been contacted for approval and preliminary discussions suggest that this project will be approved. Recently a similar project was approved in East Hampton. During the application process the SEQRA forms will also be filed and reviewed.

Resources/reference guide:

New York State Salt Marsh Restoration and Monitoring Guidelines
Prepared by Nancy L Niedowski for the NYS Department of State
Division of Coastal Resources and the NYSDEC Bureau of Marine Resources
December 15, 2000

Ecological Restoration and Enhancement of Southampton Town owned tidal wetlands
Prepared by Christopher Pickerell
Cornell Cooperative Extension Marine Program, Suffolk County
March 1995

Attachment B. Project Budget

1. Phragmites australis cutting, spraying and removal by Allied Biological

Allied Biological estimate for herbicide application and cutting

$9,400/year for two years	Total	$18,800
4,500 just herbicide, third year		4,500
1,700 raking and removal		1,700
Travel and lodging for staff		5,000
Total cost:		**$30,000**

2. Work completed by Town of Southold staff:

	Hours	Cost in dollars
GIS mapping/ updating wetland layer	50	2,150
Post treatment monitoring	150	4,800
Project management	150	5,400
Costs associated with permits	20	1,100
Post treatment	60	3,520

Research	10	320
Prevention of re-infestation/Planting	100	3,200
Education	10	520
Use of Town equipment	80 hours x $60/hour =	4,800
Travel		700
Costs for supplies, materials, chemicals, and materials required to execute the project		700
Costs associated with the removal and disposal of dead plant or animal material produced as a result of the successful execution of the project		1,790
Costs associated with fulfilling regulatory obligations (e.g., public notification, providing alternative sources of drinking water, etc.) directly related to the execution of the project		500
Costs for directly related consultant and legal services;		500
Total match from Town employees, equipment, and supplies		**$30,000**

Attachment C. Project Schedule

1. September 2007
   Begin project by collecting field data for project site. Take photos and compile data on plant species. Contract with Allied Biological to begin eradication process.

2. Fall 2007
   First treatment/herbicide application/cutting of phragmites; raking and removal of phragmites cuttings.

3. Continuous monitoring of site, on a weekly basis; check plants, set up transects and quadrats, take photos.

4. Spring 2008
   Check site for plant growth. Mow or cut phragmites. Continue with Allied Biological protocol. Continue to collect data on transects.

5. Fall 2008
   Second herbicide treatment and cutting.

6. Continue to monitor site and collect data.

7. Fall 2009
   Last herbicide application. Collect data before and after application.

8. Growing season 2010: Evaluate success of eradication and plan any needed maintenance program to keep phragmites from reestablishing. Determine the need for planting of native species where they have not filled in. Plant where needed.

9. Prepare a final report on program.

Attachment D. Resolution

See attached resolution

Attachment E. Maps and Photographs

1. Map/aerial showing two parcels for phragmites eradication
2. Tax map showing location of parcels
3. Locator map showing parcels.
4. Photos of site and other aerials.

Attachment F. Invasive Species Management Plan

1. Problem statement
   Maps: Attached here are maps and aerials indicating areas currently infested with the invasive plant Phragmites.
   Identification of target aquatic invasive species: Target species is a well known plant that was identified by staff biologists.
   History of infestation: The area has been invested for over 20 years with the phragmites, according to local knowledge of the area and past aerial photography. The infestation is increasing; the plants send out runners, and the plant is popping out throughout the marsh each season.
   Uses impaired: The invasive species is invading an otherwise healthy marsh, decreasing the species diversity, habitat cover and food value, and blocking the viewshed of the area.
   Rare/endangered/species of concern:
   Diamond back terrapin
   Horseshoe crabs
   Piping Plover
   Osprey
   Great egret
   Least tern
   Common tern

2. Management History
   There is no previous management history of this site. The Town only recently purchased the land where the wetland is located (2005).

3. Management Objectives

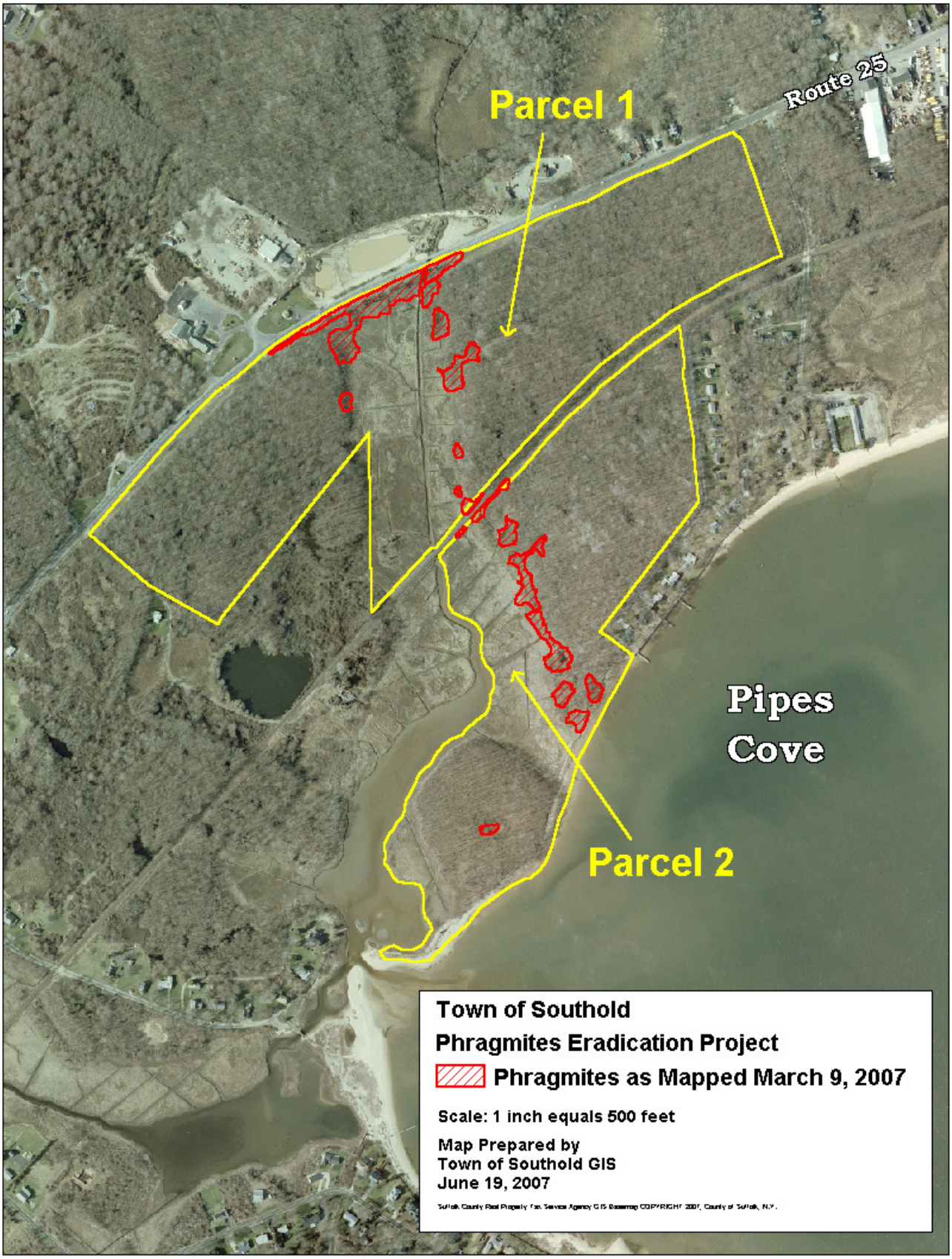
Extent of Preferred Control: The objective is to eradicate all the phragmites from the wetlands on the two parcels over a 3 year period.
Expected Use Benefits: The benefit to the ecosystem as a whole is that the wetland will be restored to an ecologically healthier system. The phragmites have currently replaced native species, that have greater habitat and food resource value to the species that inhabit the marsh. Eradication of the phragmites will allow for the native species to reestablish in the project areas. A healthier marsh will provide all the values that wetlands offer to an estuary: habitat for birds and marine organisms, nursery grounds, flood control, food, nutrients, pollution filtration, buffering of storm impacts, as well as aesthetic values.
Critical Areas to Protect: The project wetland provides habitat and buffering for the adjacent creek, cove, and bay. The area to protect include all these areas: Pipes Cove Creek, Pipes Cove, Peconic Bay.

4. Management Alternatives
Local control- This would be very time consuming and labor intensive. The Town has several Town owned wetlands with phragmites infestations, but its staff is very limited in time available to work on removing the plant. The other problem with working only on a small area is that the other phragmites will continue to seed that area.
Lakewide control:
- Physical/mechanical control: this is part of what is being proposed for this grant. The plants will be cut and physically removed.
-Biological control: there are methods using the introduction of herbivorous insects to eradicate the phragmites. Our research shows there are problems with this method and we do not propose trying it.
-Chemical control- As described in the project narrative we do propose to use an herbicide on the invasive plant species.
No Action Alternative- Management of the phragmites by no action will most probably result in the increase of phragmites throughout the marsh. This is not an alternative that the Town wants to follow.
Preferred Alternative- As proposed.
Integrated management- Not at this time.

5. Pre-During and Post Treatment Actions Planned
Monitoring- Aquatic Invasive Species- At the completion of the project, the cutting and spraying, a long term monitoring plan will be implemented. Transects will be set up and monitored weekly in season to count the plants. The long term maintenance will include continued cutting and mowing of any future phragmites that grows on the marsh. The work will be conducted by employees of the Town of Southold. The project may also possibly be monitored by a school group as part of the educational component. The data and photos that are collected will be compiled into a report to monitor the success of the various methods of eradication.
Early response- Frequent monitoring of the site will identify any new invasives after the completion of the project. These will be cut or mowed. Educational programs may be set up using the project site as a test model for eradication in other wetlands within the Town.
Source Management- The Town will publish in the local paper information on the eradication project, and also prepare a flyer that will be distributed at Town Hall.
Evaluation of Efficacy- The final site inspections will evaluate the success of the project. Positive affects on fisheries may include water quality improvements in the adjacent creek, which is currently closed to shell fishing. A final survey will be distributed to all involved to evaluate the success of the project.

Attachment G. Ownership Documentation and Permission

The subject wetland is located on lands owned by the Town of Southold. This project as proposed required permission from the Town Board and the Land Preservation Commission. These Boards have given permission for the eradication grant to be applied for, and to commence the work needed. Attached here is a copy of the tap map showing the location of the wetland, and attached tax sheet showing the ownership as the Town of Southold.


Parcel 1
Route 25
Pipes
Cove
Parcel 2
Town of Southold
Phragmites Eradication Project
Phragmites as Mapped March 9, 2007
Scale: 1 inch equals 500 feet
Map Prepared by
Town of Southold GIS
June 19, 2007